

Doc Code: AP.PRE.REQ

PTO/SB/33 (06-09)

Approved for use through 07/31/2009. OMB 0651-0031

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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

P03002US1A; 295620-214153

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Typed or printed name _____

Application Number

10/791,049

Filed

March 2, 2004

First Named Inventor

Wang et al.

Art Unit

1796

Examiner

Jeffrey C. Mullis

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

/Shaun J. Fox/

Signature

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

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July 13, 2009

Date

Registration number if acting under 37 CFR 1.34 _____

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

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ARGUMENTS

I. Rejection of Claims 10-17, 23, and 34 Under 35 U.S.C. § 102(b) and § 103(a)

U.S. Patent No. 6,437,050 to Krom was cited as anticipating claims 10-17, 23-25, 27-31, and 34-37 of the application. With the exception of claim 12, JP2000514791, using U.S. 6,383,500 to Wooley as a translation, was also cited as anticipating or making obvious the same claims. The Final Office Action is clearly erroneous in its interpretation of the claim term “mono-block and diblock polymer chains,” and absent this interpretation or even under this interpretation, a prima facie case of unpatentability is not made.

The primary point of contention regarding these claims, that Krom does not disclose “mono-block and diblock polymer chains,” has already been considered in a previously filed Pre-Appeal Brief Review Conference, which resulted in the reopening of prosecution. The only possible difference now, is that the current Examiner is framing the issue in terms of claim interpretation, not as a disagreement with what the reference teaches as was previously done. This difference, however, is inconsequential.

The Krom and Wooley references disclose particles that are made up of a collection of diblock polymer chains (that in Krom at least, are assembled by micelle assembly and are held together at the core by a cross-linking agent). However, neither Wang nor Wooley disclose nanoparticles that also include mono-block polymer chains that are part of the collection of polymer chains that make up the nanoparticles. Thus, they do not disclose nanoparticles that include “mono-block polymer chains.” The Examiner does not appear to contend that the references disclose “mono-block polymer chains” as properly construed in this manner. The Examiner does not challenge the explanation in the submitted Declaration under 37 C.F.R. § 1.132 that the addition of monomer to the diblock polymer chains recited in Krom would

create either a longer di-block polymer chain or a tri-block polymer chain, depending on the identity of the added monomer.¹ Nor does the Examiner contend that Wooley discloses anything other than nanoparticles that are made up of di-block copolymers.²

Instead, the Examiner is construing the claim terms in an unreasonably overbroad and clearly erroneous manner to make the teaching of the references fit the claims. The Examiner is construing the meaning of the claim term “mono-block and diblock polymer chains” to mean mono-block moieties and di-block moieties of polymer chains.³

It is recognized that “mono-block polymer chain” is not a particularly common term. This indicates that the specification should be referred to for its interpretation. From the context of the claim itself, it is clear that the term mono-block polymer chain is used in conjunction with and in contrast to the term di-block polymer chain. Thus, it should not be read as meaning a moiety of a diblock polymer. In fact, in light of this, the only reasonable interpretation of this term to one of skill in the art, however, is that it means a homopolymer: not a homopolymeric sub-part of a larger multi-block polymer. Furthermore, Applicants are entitled to be their own lexicographer, and it is clear that from the specification that a homopolymer is what is meant by mono-block polymer chain. On page 6, the specification states:

After formation of the first polymer, a second monomer is added to the polymerization, along with additional initiator. The second monomer polymerizes onto the first polymer to form a diblock polymer **as well as forming a separate second polymer which is a mono-block polymer.** (emphasis added)

¹ See Final Office Action, March 11, 2009.

² The substance of the rejection based on Wooley simply states: “Since a diblock copolymer as is disclosed in the examples is two monoblocks attached to each other the limitations of the claims are met.” *Id.*

³ See Advisory Action, May 19, 2009, page 2.

Clearly, in light of the specification, the mono-block polymer chain of claim 10 should be interpreted to be a separate polymer formed by a monomer, *i.e.* a homopolymer. The specification defines a mono-block polymer as a separate second polymer. Citation to this passage of the specification is not incorporating limitations from the specification into the claims. It is merely using the specification to clarify the meaning of an uncommon term that is in dispute.

Even under the Examiner's interpretation of the claim term "polymer chain" as meaning moiety, the cited references do not make out a prima facie case of obviousness. The references only teach particles that are made of multi-block polymer chains. The only way to apply the teachings of the references to anticipate the claims is to consider that a di-block or tri-block polymer chain is both a mono-block and a di-block polymer chain at the same time.

Such an interpretation strains credulity and renders the mono-, d-, or tri- block terminology meaningless, as explained in the Response of May 11, 2009. Even the Examiner, in the Advisory Action of May 19, 2009 admitted that "[a]pplicants argument that a 'polymer chain that has two or three blocks cannot be said to be a mono-block polymer chain' is correct." Thus, it is completely unclear how the rejection can be maintained.

In the Advisory Action, the Examiner mentioned that the claims recite that the nanoparticles "include" the "mono-block and di-block polymer chains", and that this is not a synonym with the term "be." However, this argument is immaterial because the cited references do not teach the inclusion of both mono-block and di-block polymer chains (or moieties) in the nanoparticles, as is required by the claims. The references do not teach mono-block polymer chains (or moieties) at all.

The mono-block polymers required by the claims are more than mere design choices, as can be seen in the Examples of the invention, where varying the mono-block polymer content increases the polydispersity of the nanoparticles.

Furthermore, no reasoning as to the unpatentability of claims 36 and 37 in view of the prior art has been made. The rejection for lack of written description has been overcome.

II. Rejection of Claims 24-25, 27-31 and 35-37 Under 35 U.S.C. § 102(b) or § 103(a)

A. Rejection based on Krom

In previous Office Actions, the Examiner had correctly noted that Krom did not disclose the limitation of a polydispersity index of about 1.5 to 10. However, when prosecution was reopened after the Pre-Appeal Brief Conference Review, the Office Action stated that this element was disclosed in Krom. However, the previous position is correct, Krom does not disclose this limitation either expressly or inherently, and Wooley is even less relevant. Again (as was the case in section I), in the rejections of claims 24-25, 27-31, and 35-37 that were made after the last pre-appeal brief conference request, the Examiner is erroneously broadening the interpretation of the claim terms in order to make the teachings of the references fit the claims.

The Examiner contends that despite Krom and Wooley's clear focus on particles that have "substantial[] monodispersity"⁴ and "low polydispersity,"⁵ the disclosures of dispersities of "less than about 1.3"⁶ and 1.17, 1.14, and 1.10⁷ anticipate the claimed limitation of a "polydispersity index between about 1.5 and about 10."

⁴ Krom, column 2, lines 11-13.

⁵ Wooley, first sentence of summary section.

⁶ Krom, column 2, lines 13-15

⁷ Wooley, Example 4.

The former Examiner had requested that Applicants explain why the “dispersity less than about 1.3, more preferably less than about 1.1” disclosure in Krom, is different and not obvious from the claimed about 1.5 to 10 size polydispersity index. Applicant’s did this by pointing to the unexpected results disclosed in the specification (see Responses dated 12/11/08 and 5/7/09).

The only indication of polydispersity of the nanoparticles of the cited references is that they are preferably substantially monodisperse. No person of skill in the art would consider this to be an anticipating disclosure of the current claim element of a polydispersity index of about 1.5 to about 10. If anything, it teaches away from the high polydispersity of about 1.5 to 10.

Furthermore, Wooley lacks several other limitations of the claims, and the Examiner has clearly not made a prima facie case of unpatentability based on Wooley. Very few of the limitations of claims 24-25, 27-31, and 35-37 are discussed in the Final Office Action at all.

Respectfully submitted,

Date: July 13, 2009

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